

REMARKS

Claims 1 through 24 are currently pending in the application.

This amendment is in response to the Office Action of July 30, 2002.

Claims 1 through 4, 6 through 8, 10, 13 and 14 were rejected under 35 U.S.C. § 102(e) as being anticipated by Shipman (United States Patent 6,217,183).

Claims 12, 15 through 21, 23 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shipman in view of Klein (United States Patent 5,925,110).

Applicant notes with appreciation the allowance of claim 11.

Claims 5, 9 and 22 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1, 6, 9, 12, 19, and 21 through 24 have been amended. Claims 3, 8, and 20 have been canceled. It is respectfully submitted that these amendments and cancellations are made without prejudice or disclaimer to the subject matter that was previously cited in each of these claims. Reconsideration of the application is respectfully requested in light of the amendments and remarks presented herein.

35 U.S.C. § 102(e)

Claims 1 through 4, 6 through 8, 10, 13 and 14 were rejected under 35 U.S.C. § 102(e) as being anticipated by Shipman (United States Patent 6,217,183).

Applicant submits that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.

Verdegaal Brothers v. Union Oil Co. of California, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Shipman describes a keyboard having illuminated keys. The key caps of the keyboard are partially translucent and illuminated by a light source which underlies the key caps. This light

source may be an LED or LCD. A translucent light channeling membrane directs light to the key caps.

Claim 1, as amended herein, recites a remote computer keyboard having luminescent material embedded within each key cap. Shipman does not describe a keyboard that includes key caps embedded with luminescent material. Rather, the key caps of Shipman are partially translucent and positioned over a separate light source.

Therefore, Shipman does not describe each and every element of presently amended independent claim 1 to anticipate the claimed invention under 35 U.S.C. § 102. Accordingly it is respectfully submitted that claim 1, as amended herein, is not anticipated by Shipman under 35 U.S.C. § 102 and is allowable.

Claims 2 and 4 are each allowable, among other reasons, as depending from claim 1, which should be allowed.

Claim 6, as amended herein, recites a remote computer keyboard having key caps partially formed from light transmissible material and an illumination apparatus providing illumination *directly* to multiple key caps using optical fiber strands. The optical fiber strands of Shipman are routed alongside, below or embedded in the light channeling membrane so the light rays are received by the translucent material and channeled within the membrane's translucent region to the key members. See Col. 7 lines 19-25. The optical fiber strands of Shipman do not provide illumination directly to the key caps.

Therefore, Shipman does not disclose each and every element of claim 6. Accordingly it is respectfully submitted that claim 6, as amended herein, is not anticipated by Shipman.

Claim 7 recites a remote computer keyboard including a projector pane having an edge for receiving light and apertures which direct light from within the projector pane to each key cap. The light channeling membrane of Shipman has no edge for receiving light. Rather, the light source of Shipman extends below each of the key caps. The light channeling membrane has an opaque coating, and allows the light to be emitted only through the bores corresponding to each key cap.

Therefore, Shipman does not describe each and every element of claim 7 to anticipate the claimed invention under 35 U.S.C. § 102. Accordingly it is respectfully submitted that claim 7 is not anticipated by Shipman under 35 U.S.C. § 102 and is allowable.

Claim 10 recites a remote computer keyboard comprising key caps having at least one identifying graphic symbol formed from luminescent material on the upper surface of each key cap. Shipman does not describe key caps with symbols of luminescent material. Rather, Shipman teaches key caps having symbols which are opaque or translucent, illuminated by light produced from a light source located below the key caps, and channeled through the shaft of the key member.

Therefore, Shipman does not describe each and every element of claim 10. Accordingly it is respectfully submitted that claim 10 is not anticipated by Shipman under 35 U.S.C. § 102.

Claims 13 and 14 each depend from claim 12. Claim 12 has not been identified in the Office Action of July 30, 2002 as being anticipated by Shipman. Rather, the Office Action asserts that Shipman does not describe "chemical source of electrical power," a limitation of claim 12. Therefore, Shipman does not describe each and every element of claim 13 or 14 to anticipate the claimed invention under 35 U.S.C. § 102. Accordingly it is respectfully submitted that claims 13 and 14 are not anticipated by Shipman under 35 U.S.C. § 102 and is allowable..

35 U.S.C. § 103

Claims 12, 15 through 21, 23 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shipman in view of Klein (United States Patent 5,925,110).

Applicant further submits that to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the cited prior art reference must teach or suggest all of the claim limitations. Furthermore, the suggestion to make the claimed

combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure.

Klein teaches a keyboard including a power supply, a battery in one embodiment.

Claim 12, as amended herein, recites a remote computer keyboard comprising at least one optical fiber strand directing light from a light source *directly* to each key cap. The optical fiber strands of Shipman are routed alongside, below or embedded in the light channeling membrane so the light rays are received by the translucent material and channeled within the membrane's translucent region to the key members. See Col. 7 lines 19-25. The optical fiber strands of Shipman do not provide illumination directly to the key caps.

Therefore, neither Shipman nor Klein teaches or suggests each and every element of claim 12 to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention. Accordingly it is respectfully submitted that claim 12, as amended herein, is allowable over the combination of Shipman and Klein under 35 U.S.C. § 103.

Claim 15 recites a remote computer keyboard including a projector pane having an edge for receiving light and apertures which direct light from within the projector pane to each key cap. The light channeling membrane of Shipman has no edge for receiving light. Rather, the light source of Shipman extends below each of the key caps. The light channeling membrane has an opaque coating, and allows the light to be emitted only through the bores corresponding to each key cap.

Therefore, neither Shipman nor Klein teaches or suggests each and every claim limitation of claim 15 to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention. Accordingly it is respectfully submitted that claim 15 is allowable over the combination of Shipman and Klein.

Claims 16 through 18 are each allowable, among other reasons, as depending from claim 15, which should be allowed.

Claim 16 is additionally allowable because Shipman does not disclose, teach, or suggest the claim limitation of an aperture partially covered with a reflective coating to establish a *prima*

facie case of obviousness under 35 U.S.C. § 103 regarding the claimed invention. The material of the light channeling membrane is translucent. See Col. 6 lines 44-56

Claim 19, as amended herein, recites a remote computer keyboard having luminescent material embedded within each key cap. Shipman does not disclose a keyboard that includes key caps embedded with luminescent material. Rather, the key caps of Shipman are partially translucent and positioned over a separate light source.

Therefore, Shipman does not teach or suggest each and every claim limitation of claim 19 to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed invention. Accordingly it is respectfully submitted that claim 19, as amended herein, is allowable over the combination of Shipman and Klein.

Claims 21 and 22 are each allowable, among other reasons, as depending from claim 19, which should be allowed. Claim 22 has been indicated to contain allowable subject matter.

Claim 23, as amended herein, recites a remote computer keyboard having key caps partially formed from light transmissible material and an illumination apparatus providing illumination *directly* to multiple key caps using optical fiber strands. The optical fiber strands of Shipman are routed alongside, below or embedded in the light channeling membrane so the light rays are received by the translucent material and channeled within the membrane's translucent region to the key members. See Col. 7 lines 19-25. The optical fiber strands of Shipman do not provide illumination directly to the key caps.

Therefore, Shipman does not teach or suggest each and every claim limitation of claim 23 to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention. Accordingly it is respectfully submitted that claim 23, as amended herein, is allowable over the combination of Shipman and Klein.

Claim 24 recites a remote computer keyboard including a projector pane having an edge for receiving light and apertures which direct light from within the projector pane to each key cap. The light channeling membrane of Shipman has no edge for receiving light. Rather, the light source of Shipman extends below each of the key caps. The light channeling membrane has

an opaque coating, and allows the light to be emitted only through the bores corresponding to each key cap.

Therefore, Shipman does not teach or suggest each and every claim limitation of claim 24 to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention. Accordingly it is respectfully submitted that claim 24, as amended herein, is allowable over the combination of Shipman and Klein.

Objection to Claims 5, 9 and 22 and Allowable Subject Matter

Claims 5, 9, and 22 stand objected to as being dependent upon rejected base claims, but are indicated to contain allowable subject matter and would be allowable if placed in appropriate independent form. Claims 1 and 19 have been amended. It is respectfully requested that claim 5, 9, and 22 be reconsidered in light of the amendments to base claims 1 and 19 and the remarks presented herein.

Conclusion

For the reasons set forth herein, Applicant submits that claims 1 through 24 are clearly allowable over the cited prior art.

Applicant requests the allowance of claims 1 through 24 and the case passed for issue.

Respectfully submitted,



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JRD/sls:djp

Enclosure: Version with Markings to Show Changes Made

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APPENDIX A

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

A marked-up version of each of the presently amended claims, highlighting the changes thereto, follows:

1. (Thrice Amended) A remote computer keyboard comprising:
an enclosure member;
a printed circuit board positioned in said enclosure member;
a plurality of depressible key switch devices arrayed above said printed circuit board;
a key cap mounted atop each switch device of said plurality, each key cap having at least one
identifying graphic symbol formed on an upper surface thereof; and
luminescent material embedded within each key cap [illuminating said at least one graphic
symbol on each key cap].
6. (Twice Amended) A remote computer keyboard comprising:
an enclosure member;
a printed circuit board positioned in said enclosure member;
a plurality of depressible key switch devices arrayed above said printed circuit board;
a key cap partially formed from light-transmissible material mounted atop each switch device of
said plurality, each key cap having at least one identifying graphic symbol formed on an
upper surface thereof; and
illumination apparatus illuminating said at least one graphic symbol on each key cap,
said illumination apparatus including at least one battery-powered light source providing
illumination directly to multiple key caps using optical fiber strands.

9. (Twice Amended) The remote computer keyboard of claim 1[8], wherein the at least one symbol on each key cap is identifiable under bright lighting conditions and identifiable for a period of time in non-bright lighting conditions when said luminescent material luminesces.

12. (Twice Amended) A remote computer keyboard comprising:
an enclosure member;
a printed circuit board positioned in said enclosure member;
a plurality of depressible key switch devices arrayed above said printed circuit board;
a key cap mounted atop each switch device of said plurality of switch devices, each key cap
having a central portion formed from light transmissible material and having at least one
identifying graphic symbol formed on said central portion;
a chemical source of electrical power;
at least one light source powered by said chemical source of electrical power; and
at least one optical fiber strand directing light from said at least one light source directly to each
key cap.

19. (Twice Amended) A remote computer keyboard comprising:
an enclosure member;
a chemical source of electrical power;
a transmitter mounted on said enclosure member, said transmitter powered by said chemical
source of electrical power;
an insulative material layer covered with circuit traces, said insulative material layer being
positioned in said enclosure member, said circuit traces being coupled to said transmitter;
a plurality of depressible key switch devices arrayed above said insulative material layer;
a key cap mounted atop each switch device of said plurality of switch devices, each key cap
having at least one identifying graphic symbol formed on a surface thereof; and

[illumination apparatus for identifying the at least one graphic symbol on each key cap]
luminescent material embedded within a portion of each key cap.

21. (Twice Amended) The remote computer keyboard of claim 19, wherein said [illumination apparatus] luminescent material includes luminescent material forming said at least one symbol.

22. (Twice Amended) The remote computer keyboard of claim 19, wherein said [illumination apparatus] luminescent material includes tritium embedded within said at least one symbol.

23. (Twice Amended) A remote computer keyboard comprising:
an enclosure member;
a chemical source of electrical power;
a transmitter mounted on said enclosure member, said transmitter powered by said chemical
source of electrical power;
an insulative material layer covered with circuit traces, said insulative material layer being
positioned in said enclosure member, said circuit traces being coupled to said transmitter;
a plurality of depressible key switch devices arrayed above said insulative material layer;
a key cap mounted atop each switch device of said plurality of switch devices, each key cap
having at least one identifying graphic symbol formed on a surface thereof;
[The remote computer keyboard of claim 19, wherein said illumination apparatus includes] at
least one light source powered by said chemical source of electrical power which
provides illumination directly to multiple key caps through optical fiber strands[,] ; and
each key cap of said key cap mounted atop said plurality of depressible key switch devices at
least partially formed from light-transmissible material.

24. (Twice Amended) A remote computer keyboard comprising:
an enclosure member;
a chemical source of electrical power;
a transmitter mounted on said enclosure member, said transmitter powered by said chemical
source of electrical power;
an insulative material layer covered with circuit traces, said insulative material layer being
positioned in said enclosure member, said circuit traces being coupled to said transmitter;
a plurality of depressible key switch devices arrayed above said insulative material layer;
a key cap mounted atop each switch device of said plurality of switch devices, each key cap
having at least one identifying graphic symbol formed on a surface thereof;
[The remote computer keyboard of claim 19, wherein said illumination apparatus includes:]
at least one light source powered by said chemical source of electrical power; and
a projector pane positioned beneath a key cap mounted atop said plurality of depressible key
switch devices, said projector pane having an edge for receiving light from said at least
one light source and having apertures which direct light from within the projector pane to
each key cap of said key cap mounted atop said plurality of depressible key switch
devices.